

UK Patent Application GB 2 327 456 A

(43) Date of A Publication 27.01.1999

(21) Application No 9807644.1

(22) Date of Filing 09.04.1998

(30) Priority Data

(31) 9707047

(32) 09.04.1997

(33) GB

(51) INT CL⁶

E05B 1/06

(52) UK CL (Edition Q.)

E2A ACAP A106 A141 A160

(56) Documents Cited

GB 2294724 A

GB 0958514 A

GB 0649071 A

GB 0590335 A

GB 0514536 A

GB 0507001 A

GB 0460132 A

EP 0133068 A1

US 4169618 A

US 4124238 A

US 3876236 A

US 3767241 A

(71) Applicant(s)

Graham Christopher Nee
8 Ashlea Road, Pensby, WIRRAL, Merseyside,
L61 5UN, United Kingdom

(58) Field of Search

UK CL (Edition P) E2A ACAP

(72) Inventor(s)

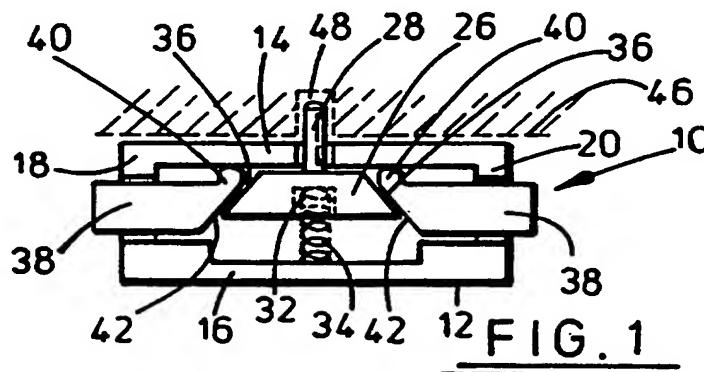
Graham Christopher Nee

(74) Agent and/or Address for Service

Roystons
Tower Building, Water Street, LIVERPOOL, L3 1BA,
United Kingdom

(54) Abstract Title
Locking device

(57) A locking device comprises in a casing (12) a spring-loaded locking member (34, 28) normally urged outwards of the casing and means (38) for withdrawing the locking member into the casing.



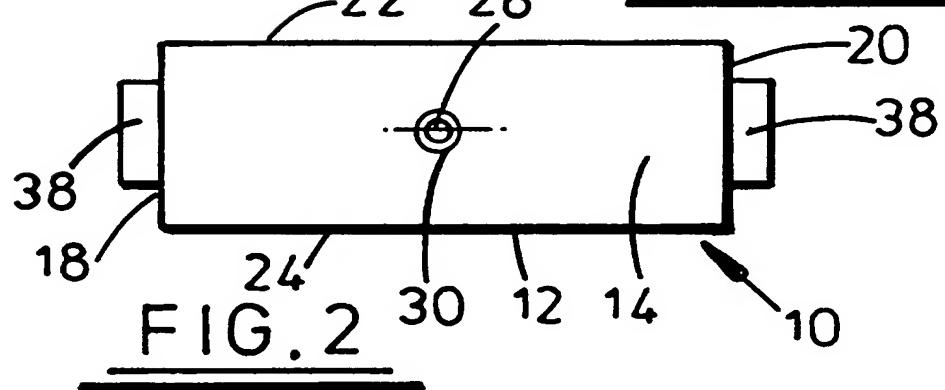
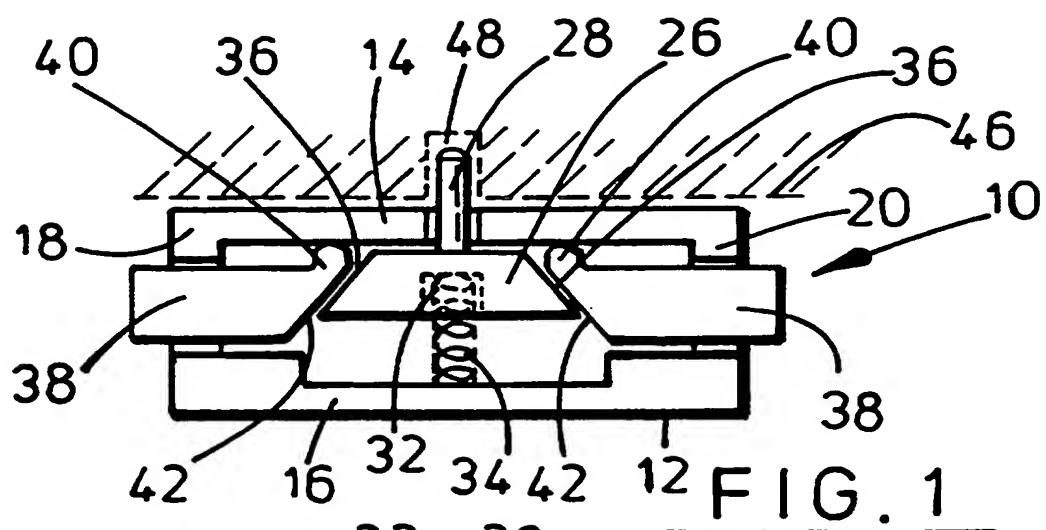
GB 2 327 456 A

BEST AVAILABLE COPY

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

1-1



TITLE: Locking devices

DESCRIPTION

This invention concerns locking devices.

Of much concern to parents and other people responsible for well being of children is the ease with which children can gain access to cupboards and the like containing common household items and medicines that used properly are harmless, but which in the wrong hands can even be fatal. For example, cleaning liquids, detergents, bleaches and the like are often kept in cupboards at floor level. Medicines are kept in bathroom cupboards that can be reached even by very young children by climbing.

It would be safer for such cupboards to be locked permanently but the cost of installing locks in all necessary cupboards may be prohibitive and keeping track of keys could become a problem.

A simple locking device that can be operated by an adult but not by a child would provide a solution to the above-described problem.

An object of the present invention is to provide such a locking device.

According to this invention there is provided a locking device comprising in a casing a spring-loaded locking member normally urged outwards of the casing and means for withdrawing the locking member into the casing.

Preferably the locking member is a spigot extending from a carrier therefor and through an opening in the casing. The spigot is preferably urged outwards of the

casing by spring means between the carrier and a wall of the casing. Preferably part of the spring means is received in a bore of the carrier.

The means for withdrawing the locking member preferably comprises one or more pusher members. Preferably the pusher members are arranged to act on the carrier for the locking member in a direction transverse to the direction of movement of the locking member. That may be achieved by the carrier and pusher member or members having cooperating sloping faces, whereby movement of a pusher member inwards urges the carrier against its spring means to withdraw the locking member into the casing.

In a preferred embodiment, the carrier has sloping faces at each end and a pair of pusher members, each with an oppositely sloping end face, are arranged on opposite each end of the carrier, so that pressing the two pusher members towards each other causes the locking member to withdraw into the casing.

The locking device of the invention may be used in many situations where a door or other access panel needs to be locked. The locking device may be affixed to the access panel and a hole formed in a frame into which the panel fits, so that the locking member is urged into that hole to lock the panel to its frame. Alternatively, the locking device may be on the frame and the panel provided with hole such as in an edge of the panel or by means of an added keep.

The locking device of the invention may be used not only for cupboards and the like but also for boxes, chests and other storage containers.

There are various ways in which the effectiveness of the locking device may be varied, so as to control who is capable of operating the device. The strength of

the spring loading of the locking member may be varied by choice of spring. Where two pusher members are used, their size and hence the length of grip required to push them together at the same time may be varied. Thus, a small child may not be able to operate the locking device simply by not having sufficient strength or by not having a sufficiently large grip. On the other, an adult can be quite capable of operating the locking device of the invention even if a child cannot.

This invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a section through a locking device according to the invention; and

Figure 2 is a plan view of the locking device of Figure 1.

Referring to the accompanying drawings, a locking device 10 has a casing 12 having a top wall 14, a bottom wall 16, end walls 18 and 20 and side walls 22 and 24. Within the casing 12 is a carrier 26 having a locking pin 28 extending therefrom and through aperture 30 in the top casing wall 14.

The carrier 26 has a bore 32 in which is received one end of a helical spring 34, whose opposite end abuts the bottom casing wall 16.

The carrier 26 has at each end facing the end walls 18 and 20 of the casing a sloping face 36, whereby the carrier has divergent end faces towards the bottom wall of the casing.

Through each end wall 18 and 20 of the casing extend pushers 38. The inwards ends of the pushers have a lip 40 to retain the pushers within the casing and the end face 42 of each pusher is sloped to match the sloping face 36 of the carrier to which it extends. Thereby, when the pushers 38 are pressed towards each other, they

act on the carrier 26 to urge it towards the bottom wall 16 of the casing 12 against the action of the spring 34 in order to withdraw the locking pin 28 into the casing. Releasing the pushers 38 will allow the locking pin 28 to move outwardly.

Thus, for example, the locking device 10 may be mounted on a door of a cupboard and a frame for the door, such as 46 in Figure 1, may be provided with a receiving hole 48 for the locking pin 28, whereby the locking device can be used to lock the door. If the ends of the pushers 38 are far enough apart and/or the spring 34 is sufficiently strong, a child may be prevented from opening the door because they cannot grip the pushers in one hand and/or cannot overcome the resistance of the spring.

The locking device of the invention may be made inexpensively and may be fitted easily to doors, access panels, box lids or in any other situation where it would be advantageous.

CLAIMS

1. A locking device comprising in a casing a spring-loaded locking member normally urged outwards of the casing and means for withdrawing the locking member into the casing.
2. A device as claimed in claim 1, wherein the locking member is a spigot extending from a carrier therefor and through an opening in the casing.
3. A device as claimed in claim 2, wherein the spigot is urged outwards of the casing by spring means between the carrier and a wall of the casing.
4. A device as claimed in claim 3, wherein part of the spring means is received in a bore of the carrier.
5. A device as claimed in any one of claims 1 to 4, wherein the means for withdrawing the locking member comprises one or more pusher members.
6. A device as claimed in any one of claims 2 to 5, wherein the pusher members are arranged to act on the carrier for the locking member in a direction transverse to the direction of movement of the locking member.
7. A device as claimed in claim 6, wherein the carrier and pusher member or members have cooperating sloping faces, whereby movement of a pusher member inwards urges the carrier against its spring means to withdraw the locking member into the casing.
8. A device as claimed in claim 6 or 7, wherein the carrier has sloping faces at each end and a pair of pusher members, each with an oppositely sloping end face, are

arranged on opposite each end of the carrier, so that pressing the two pusher members towards each other causes the locking member to withdraw into the casing.

9. A locking device as substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.



The
Patent
Office
3

Application No: GB 9807644.1
Claims searched: 1-9

Examiner: A J Rudge
Date of search: 28 October 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): E2A(ACAK,ACAP)

Int Cl (Ed.6): -

Other: -

Documents considered to be relevant:

Category	Identity of document and relevant passage			Relevant to claims
X	US 4,169,618	(Norris) - eg. Fig.1		1-4 at least
X	US 4,124,238	(Bischoff) - see the Figs		"
X	US 3,876,236	(Best Lock) - see the Figs		"
X	US 3,767,241	(Keystone) - see the Figs		"
X	GB 2 294 724 A	(Strattee) - see the Figs and abstract		1-5 at least
X	GB 958 514	(Ahrend-Libra) - see whole document		"
X	GB 649 071	(Bloore & Piller) - " " "		"
X	GB 590 335	(Walsall Locks) - " " "		"
X	GB 514 536	(Fearnhill) - " " "		"
X	GB 507 001	(Stevens) - " " "		"
X	GB 460 132	(Duncombe) - " " "		"
X	EP 0 133 068 A1	(Berard) - " " "		"

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.